AMENDMENTS TO THE CLAIMS

Claims 1-22 (cancelled)

Claim 23 (currently amended): A method for the optical examination and/or processing of a sample, comprising the steps of:

generating a short-pulse illumination light;

splitting the illumination light spectrally for generating spatially separated spectral components with pulse lengths that are greater than the pulse length of the illumination light source;

said spectral components traversing transmission optics in the direction of the sample;

focusing the illumination light on or in the sample, wherein the spectral components are superposed; and

detecting the sample light;

wherein the spatially separated spectral components are changed into a parallel beam bundle.

Claim 24 (canceled)

Claim 25 (previously presented): The method according to claim 23,

wherein the pulse length of the spectral components focused on or in the sample is smaller than the pulse length of the spatially separated spectral components.

Claim 26 (currently amended): An arrangement for the optical examination and/or processing of a sample, comprising:

means for generating an illumination light;

means arranged downstream of the latter for spectral splitting of the illumination light for generating spatially separated spectral components with pulse lengths that are greater than the pulse length of the illumination light source;

means for parallelizing the split illumination light;

means for focusing the illumination light on or in the sample, wherein the spectral components are superposed; and

means for detecting the sample light;

wherein means are provided for changing the spatially separated spectral components into a parallel beam bundle.

Claim 27 (currently amended): An arrangement for the optical examination and/or processing of a sample, comprising:

means for generating a short-pulse illumination light;

means arranged downstream of the latter for spectral splitting of the illumination light for generating spatially separated spectral components with pulse lengths that are greater than the pulse length of the illumination light;

transmission optics for transmitting the spectral components in the direction of the sample;

means for focusing the illumination light on or in the sample, wherein the spectral components are superposed; and

means for detecting the sample light;

wherein means are provided for changing the spatially separated spectral components into a parallel beam bundle.

Claim 28-29 (canceled)

Claim 30 (previously presented): The arrangement according to claim 26,

wherein the pulse length of the spectral components that are focused on or in the sample is smaller than the pulse length of the spatially separated spectral components.

Claim 31 (previously presented): The arrangement according to claim 27, wherein the pulse length of the spectral components that are focused on or in the sample is smaller than the pulse length of the spatially separated spectral components.

Claim 32 (currently amended): The arrangement according to claim 26,

wherein dispersion means ~~which are preferably adjustable~~ are provided between the light source and the means for spectral splitting.

Claim 33 (currently amended): The arrangement according to claim 27,

wherein dispersion means ~~which are preferably adjustable~~ are provided between the light source and the means for spectral splitting.

Claim 34 (previously presented): The arrangement according to claim 26,

wherein the parallel beam bundle is coupled into and out of a glass fiber bundle.

Claim 35 (previously presented): The arrangement according to claim 27,

wherein the parallel beam bundle is coupled into and out of a glass fiber bundle.

Claim 36 (previously presented): The arrangement according to claim 26,

wherein the spectral splitting is carried out by at least one prism and/or axicon and/or transmission grating and/or reflection grating.

Claim 37 (previously presented): The arrangement according to claim 27,

wherein the spectral splitting is carried out by at least one prism and/or axicon and/or transmission grating and/or reflection grating.

Claim 38 (previously presented): The arrangement according to claim 26,

wherein the change into a parallel beam bundle is carried out by another prism or another axicon or another grating.

Claim 39 (previously presented): The arrangement according to claim 27,

wherein the change into a parallel beam bundle is carried out by another prism or another axicon or another grating.

Claim 40 (previously presented): The arrangement according to claim 38,

wherein a first prism and a second prism or first axicon and second axicon are constructed in such a way that, together, they act like a plane plate.

Claim 41 (previously presented): The arrangement according to claim 39,

wherein a first prism and a second prism or first axicon and second axicon are constructed in such a way that, together, they act like a plane plate.

Claim 42 (previously presented): The arrangement according to claim 26,

wherein a direct-vision prism is provided for splitting and parallelizing .

Claim 43 (previously presented): The arrangement according to claim 42,

wherein a direct-vision prism is provided for splitting and parallelizing .

Claim 44 (previously presented): The arrangement according to claim 26,

wherein a compensating element is provided in the parallel beam path for influencing the components.

Claim 45 (previously presented): The arrangement according to claim 27, wherein a compensating element is provided in the parallel beam path for influencing the components.

Claim 46 (previously presented): The arrangement according to claim 44, wherein the components are influenced in an adjustable manner by exchangeable optical elements with different cross-sectional shapes and/or by a spatial light modulator.

Claim 47 (previously presented): The arrangement according to claim 45, wherein the components are influenced in an adjustable manner by exchangeable optical elements with different cross-sectional shapes and/or by a spatial light modulator.

Claim 48 (previously presented): A method of using the arrangement according to claim 26 comprising the step of using it in a fluorescence microscope.

Claim 49 (previously presented): A method of using the arrangement according to claim 27 comprising the step of using it in a fluorescence microscope.

Claim 50 (previously presented): A method of using the arrangement according to claim 26 comprising the step of using it in a multiphoton microscope.

Claim 51 (previously presented): A method of using the arrangement according to claim 27 comprising the step of using it in a multiphoton microscope.

Claim 52 (previously presented): A method of using an arrangement according to claim 26 comprising the step of using it in a laser scanning microscope.

Claim 53 (previously presented): A method of using an arrangement according to claim 27 comprising the step of using it in a laser scanning microscope.

Claim 54 (previously presented): A method of using an arrangement according to claim 26 comprising the step of using it in a nonlinear laser scanning microscopy.

Claim 55 (previously presented): A method of using an arrangement according to claim 27 comprising the step of using it in a nonlinear laser scanning microscopy.

Claim 56 (previously presented): A method of using an arrangement according to claim 26 comprising the step of using it in materials processing.

Claim 57 (previously presented): A method of using an arrangement according to claim 27 comprising the step of using it in materials processing.

Claim 58 (previously presented): A method of using an arrangement according to claim 26 in the treatment of biological tissue.

Claim 59 (previously presented): A method of using an arrangement according to claim 27 in the treatment of biological tissue.

Claim 60 (previously presented): A method of using an arrangement according to claim 26 in the treatment of the cornea of the eye.

Claim 61 (previously presented): A method of using an arrangement according to claim 27 in the treatment of the cornea of the eye.